

WHAT IS CLAIMED AS NEW AND IS DESIRED TO BE SECURED BY LETTER
PATENT OF THE UNITED STATE IS:

1. A coordinate inputting/detecting apparatus, in which a designating device configured to designate a position in an at least substantially flat two-dimensional coordinate inputting/detecting area of the coordinate inputting/detecting apparatus is judged as located in a predetermined range of the coordinate inputting/detecting area when an optical detection signal of an optical unit, configured to optically detect the designating device inserted into the predetermined range of the coordinate inputting/detecting area, exceeds a first threshold value, and in which whether or not the designating device has been inserted into the predetermined range of the coordinate inputting/detecting area is judged and coordinates of a position in the coordinate inputting/detecting area, designated by the designating device inserted in the predetermined range of the coordinate inputting/detecting area, are recognized in accordance with the optical detection signal of the optical unit, wherein a second threshold value used in recognizing the coordinates of the position in the coordinate inputting/detecting area, designated by the designating device inserted in the predetermined range of the coordinate inputting/detecting area, is set to be higher than the first threshold value used in judging if the designating device has been inserted into the predetermined range of the coordinate inputting/detecting area.

2. A coordinate inputting/detecting apparatus, comprising:
a two-dimensional coordinate inputting/detecting area that is at least substantially flat;
a designating device configured to designate a position in the coordinate
inputting/detecting area;

an optical unit configured to optically detect the designating device inserted into a predetermined range of the coordinate inputting/detecting area and to output a detection signal according to a result of the detection;

a judging device configured to judge whether the designating device has been inserted into the predetermined range of the coordinate inputting/detecting area when the detection signal of the optical unit exceeds a first threshold value;

a recognition device configured to obtain coordinates of a position in the coordinate

inputting/detecting area, designated by the designating device inserted in the predetermined range of the coordinate inputting/detecting area, by utilizing the detection signal; and

a first threshold value prescribing device configured to prescribe a second threshold value, which is used by the recognition device in obtaining the coordinates of the position in the coordinate inputting/detecting area, designated by the designating device inserted in the predetermined range of the coordinate inputting/detecting area, said second threshold value being higher than the first threshold value.

3. A coordinate inputting/detecting apparatus of Claim 2, further comprising:
a distance judging device configured to determine a distance between the designating device inserted into the predetermined range of the coordinate inputting/detecting area and the optical unit; and

a second threshold value prescribing device configured to prescribe, according to a result of the judgement by the distance judging device as to the distance between the designating device inserted into the predetermined range of the coordinate inputting/detecting area and the optical unit, the first threshold value, such that the first threshold value is decreased as the distance between the designating device inserted into the predetermined range of the coordinate inputting/detecting area and the optical unit is increased.

4. A coordinate inputting/detecting apparatus of Claim 2, wherein the second threshold value prescribing device prescribes the first threshold value such that if the designating device is located at a farthest point from the optical unit in the coordinate inputting/detecting area, the designating device can be judged as having been inserted into the predetermined range of the coordinate inputting/detecting area.

5. A coordinate inputting/detecting apparatus of Claim 3, wherein the optical unit comprises at least first and second optical units, and wherein the second threshold value prescribing device prescribes the first threshold value for each of the first and second optical units.

6. A coordinate inputting/detecting apparatus, in which designating means for

designating a position on at least substantially flat two-dimensional coordinate
inputting/detecting area of the apparatus is judged as located in a predetermined range of the
two-dimensional coordinate inputting/detecting area of the apparatus, and in which whether
or not the designating means has been inserted into the predetermined range of the coordinate
5 inputting/detecting area is judged and coordinates of a position in the coordinate
inputting/detecting area, designated by the designating means, are recognized, wherein a
threshold value used in recognizing the coordinate of the position in the coordinate
inputting/detecting area designated by the designating means inserted into the predetermined
range of the coordinate inputting/detecting area is set to be higher than a threshold value used
10 in judging if the designating means has been inserted into the predetermined range of the
coordinate inputting/detecting area.

7. A coordinate inputting/detecting apparatus, comprising:
a two-dimensional coordinate inputting/detecting area that is at least substantially flat;
designating means for designating a position in the coordinate inputting/detecting
area;

optical detecting means for optically detecting the designating means inserted into a
predetermined range of the coordinate inputting/detecting area and for outputting a detection
signal according to a result of the detection;

judging means for judging whether the designating means has been inserted into the
predetermined range of the coordinate inputting/detecting area;

recognizing means for obtaining coordinates of a position in the coordinate
inputting/detecting area, designated by the designating means inserted into the predetermined
range of the coordinate inputting/detecting area; and

first threshold value prescribing means for prescribing a threshold value used by the
25 recognizing means in obtaining the coordinates of the position in the coordinate
inputting/detecting area, designated by the designating means inserted into the predetermined
range of the coordinate inputting/detecting area, to be higher than a threshold value used by
the judging means in judging whether or not the designating means has been inserted into the
predetermined range of the coordinate inputting/detecting area.

8. A coordinate inputting/detecting apparatus of Claim 7, further comprising:
distance judging means for determining a distance between the designating means
inserted into the predetermined range of the coordinate inputting/detecting area and the
optical detecting means; and

5 second threshold value prescribing means for prescribing, according to a result of the
judgement by the distance judging means as to the distance between the designating means
inserted into the predetermined range of the coordinate inputting/detecting area and the
optical detecting means, the threshold value used when the recognizing means recognizes the
coordinates of the position in the coordinate inputting/detecting area, such that the threshold
10 value is decreased as the distance between the designating means inserted into the
predetermined range of the coordinate inputting/detecting area and the optical detecting
means is increased.

9. A coordinate inputting/detecting apparatus of Claim 7, wherein the second
threshold value prescribing means prescribes the threshold values such that if the designating
means is located at a farthest point from the optical detecting means in the coordinate
inputting/detecting, the designating means can be judged as having been inserted into the
predetermined range of the coordinate inputting/detecting area.

10. A coordinate inputting/detecting apparatus of Claim 9, wherein the optical
detecting means comprises at least first and second optical detecting means, and wherein the
20 second threshold value prescribing means prescribes the first threshold value for each of the
first and second optical detecting means.

11. A method of inputting/detecting coordinates of a position designated by a
designating device in an at least substantially flat two-dimensional coordinate
inputting/detecting area of a coordinate inputting/detecting apparatus, the method comprising
steps of:

judging whether the designating device is located in a predetermined range of the two-
dimensional coordinate inputting/detecting area of the coordinate inputting/detecting
apparatus, when an optical detection signal based on detecting the designating device inserted

into the predetermined range of the coordinate inputting/detecting area, exceeds a first threshold value; and

judging whether or not the designating device has been inserted into the predetermined range of the coordinate inputting/detecting area and recognizing coordinates of the position in the coordinate inputting/detecting area, designated by the designating device inserted into the predetermined range of the coordinate inputting/detecting area, in accordance with the optical detection signal;

wherein a second threshold value used in recognizing the coordinates of a position in the coordinate inputting/detecting area, designated by the designating device inserted into the predetermined range of the coordinate inputting/detecting area, is set to be higher than the first threshold value used in judging if the designating device has been inserted into the predetermined range of the coordinate inputting/detecting area.

12. A method of inputting/detecting coordinates of a position designated by a designating device in an at least substantially flat two-dimensional coordinate inputting/detecting area of a coordinate inputting/detecting apparatus, the method comprising steps of:

optically detecting with an optical detecting device the designating device inserted into a predetermined range of the coordinate inputting/detecting area and outputting a detection signal according to a result of the detection;

judging whether the designating device has been inserted into the predetermined range of the coordinate inputting/detecting area when the detection signal exceeds a first threshold value;

recognizing coordinates of a position in the coordinate inputting/detecting area, designated by the designating device inserted into the predetermined range of the coordinate inputting/detecting area, by utilizing the detection signal; and

prescribing a second threshold value, which is used in recognizing the coordinates of the position in the coordinate inputting/detecting area, designated by the designating device inserted into the predetermined range of the coordinate inputting/detecting area, so as to be higher than the first threshold value.

13. A method of Claim 12, further comprising steps of:

determining a distance between the designating device inserted into the predetermined range of the coordinate inputting/detecting area and the optical detecting device; and

prescribing, according to a result of the determination as to the distance between the designating device inserted into the predetermined range of the coordinate inputting/detecting area and the optical detecting device, the first threshold value, such that the first threshold value is decreased as the distance between the designating device inserted in the predetermined range of the coordinate inputting/detecting area and the optical detecting device is increased.

14. A method of Claim 12, wherein the first threshold value is prescribed such that if the designating device is located at a farthest point from the optical detecting device in the coordinate inputting/detecting area, the designating device can be judged as having been inserted into the predetermined range of the coordinate inputting/detecting area.

15. A method of Claim 13, wherein the optical detecting device comprises at least two optical detecting units, and wherein the first threshold value is prescribed for each of the two optical detecting units.

16. A computer program product, comprising:

a computer storage medium and a computer program code mechanism embedded in the computer storage medium for causing a computer to control inputting/detecting of coordinates of a position designated by a designating device in an at least substantially flat two-dimensional coordinate inputting/detecting area of a coordinate inputting/detecting apparatus, the computer program code mechanism including:

a first computer code device configured to judge whether the designating device is located in a predetermined range of the coordinate inputting/detecting area of the coordinate inputting/detecting apparatus when an optical detection signal of an optical detecting device, that optically detects the designating device inserted into the predetermined range of the coordinate inputting/detecting area, exceeds a first threshold value; and

a second computer code device configured to judge whether or not the

designating device has been inserted into the predetermined range of the coordinate inputting/detecting area and to recognize coordinates of a position in the coordinate inputting/detecting area, designated by the designating device inserted into the predetermined range of the coordinate inputting/detecting area, in accordance with the optical detection signal of the optical detecting device;

wherein a second threshold value used in recognizing the coordinates of the position in the coordinate inputting/detecting area, designated by the designating device inserted into the predetermined range of the coordinate inputting/detecting area, is set to be higher than the first threshold value used in judging if the designating device has been inserted into the predetermined range of the coordinate inputting/detecting area.

17. A computer program product, comprising:

a computer storage medium and a computer program code mechanism embedded in the computer storage medium for causing a computer to control inputting/detecting coordinates of a position designated by a designating device in an at least substantially flat two-dimensional coordinate inputting/detecting area of a coordinate inputting/detecting apparatus, the computer program code mechanism including:

a first computer code device configured to optically detect with an optical detecting device the designating device inserted into a predetermined range of the coordinate inputting/detecting area and to output a detection signal according to a result of the detection;

a second computer code device configured to judge whether the designating device has been inserted into the predetermined range of the coordinate inputting/detecting area when the detection signal exceeds a first threshold value;

a third computer code device configured to recognize coordinates of a position in the coordinate inputting/detecting area, designated by the designating device inserted into the predetermined range of the coordinate inputting/detecting area, by utilizing the detection signal; and

a fourth computer code device configured to prescribe a second threshold value, which is used in recognizing the coordinates of the position in the coordinate inputting/detecting area, designated by the designating device inserted into the predetermined range of the coordinate inputting/detecting area, so as to be higher than the first threshold

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A4 value.

18. A computer program product of Claim 17, the computer program code mechanism further including;

5 a fifth computer code device configured to determine a distance between the designating device inserted into the predetermined range of the coordinate inputting/detecting area and the optical detecting device; and

10 a seventh computer coded device configured to prescribe, according to a result of the judgement as to the distance between the designating device inserted into the predetermined range of the coordinate inputting/detecting area and the optical detecting device, the first threshold value, such that the threshold value is decreased as the distance between the designating device inserted into the predetermined range of the coordinate inputting/detecting area and the optical detecting device is increased.

19. A computer program product of Claim 17, wherein the first threshold value is prescribed such that if the designating device is located at a farthest point from the optical detecting device in the coordinate inputting/detecting area, the designating device can be judged as having been inserted into the predetermined range of the coordinate inputting/detecting area.

20. A computer program product of Claim 18, wherein the optical detecting device comprises at least first and second optical units, and wherein the first threshold value is prescribed for each of the first and second optical units.